

CONTROL OF 'CHENTHAL' (BACTERIAL BLIGHT) DISEASE OF CARDAMOM WITH PENICILLIN

CHENTHAL disease of Cardamom caused by *Corynebacterium* sp. was the first bacterial disease reported by Mathew George *et al.*¹ on the host *Elettaria cardamomum* (L.) Maton. This is a destructive disease causing severe crop losses in the high ranges of Kerala. Six antibacterial compounds were screened in an attempt to control the disease. Penicillin was found most effective in experimental field trials.

30 days of treatment is attributed to the rainy weather which is congenial to the pathogen. Results of the second observations revealed the efficacy of penicillin as a proper control against the disease. Improvement of the treated plants was marked, while the untreated controls deteriorated.

Under field conditions 217 clumps in another plot of experimental plants were similarly sprayed with penicillin. The plants showed improvement after 60 days. The feasibility of using penicillin because it is rapidly translocated has been indicated elsewhere².

TABLE I

	Average number of lesions per leaf					
	I leaf		II leaf		III leaf	
Pre-treatment observation	2.0		26		40.3	
	Treated			Control		
	I leaf	II leaf	III leaf	I leaf	II leaf	III leaf
I observation	11.3	57.5	45.3	25	78.1	51.4
II observation	1.11	14.3	37.4	44.4	93.3	90.2

For comparative evaluation, sensitivity discs (Bharath Laboratories, India) were placed in nutrient agar plates seeded with the pathogen. After 24 hr of growth the inhibition zone was measured. Penicillin was found most effective. Kanamycin, Sulphadiazine, Erythromycin and Tetracycline inhibited growth partially, while Streptomycin was ineffective. In bioassay, using tube dilution technique, penicillin at 1 mcg/ml concentration completely inhibited the growth of the pathogen.

Field trials were undertaken at Kalarikal Estate, Vadanmedu, Kerala. Twenty-five clumps from a diseased spot were selected, each having an average of 15 to 20 pseudostems. The plants were sprayed with 100 mcg/ml solution of penicillin for three consecutive days followed by a second round of spray after a lapse of 30 days. Out of the 25 clumps, 10 were selected at random and 3 pseudostems from each were taken for disease observations. Water-soaked lesions, the first visible symptoms (Mathew George *et al.*¹) on the youngest three leaves were counted. Observations were recorded at 30 and 60 days after the initial spray. The average number of lesions in relation to number of leaves of comparable age has been consolidated and presented in Table I. The increase in the number of lesions recorded after

We thank Mr. Sajan Kurian of Kalarikal Estate who brought the disease to our notice and Dr. J. V. Bhat, Professor Emeritus, for inspiration.

CPCRI, Regional Station, MATHIEW GEORGE,
Kayangulam, N. P. JAYASANKAR,
Krishnapuram 690 533, Kerala,
December 3, 1976.

1. Mathew George, Thomas Joseph, Potty, V. P. and Jayasankar, N. P., *J. Plant. Crops*, 1976, 4, 23.
2. David Pramer, In: *Advances in Applied Microbiology*, Ed. Umbreit, W. W., Academic Press, London, 1959, 1, 78.